

Abstract

According to example embodiments for use in a communication system that is adapted to permit the users to transmit data simultaneously via shared frequency and spatial resources, an allocation of user transmission rates involves setting and maintaining the transmission rates of the users to at least a minimum user transmission rate to provide an expected minimum quality of communication for each of the users. These rates of the users are incrementally adjusted by iteratively changing the transmission rate of each user as a function of a resulting vector of transmit powers ensuing from the increased transmission rate, a degree of transmission-rate-allocation unfairness relative to the transmission rates of all the users, and a power-based selection criteria. With such an approach, the rates are fairly allocated without a disproportionate allocation of system bandwidth. Various embodiments are applicable to a variety of communication applications including OFDM or CDMA communication systems.